BUCKEYE UNMANNED AERIAL SYSTEM

U.S. ARMY CORPS OF ENGINEERS BUILDING STRONG®

Background: The BuckEye Unmanned Aerial System (UAS) is a multi-purpose platform that supports requirements for collection of UNCLASSIFIED geospatial data. Sensors include an 80-megapixel color camera and a Light Detection and Ranging (LIDAR) system that provides accurate high-resolution elevation data.

The BuckEye UAS can support CONOPS for Change Detection, Intelligence, Surveillance and Reconnaissance (ISR), and Terrain Mapping. Its purpose is to demonstrate the feasibility and military utility of rapid collection and processing of high-resolution, high-accuracy geospatial data. The versatile platform also provides a test bed for on-board data processing and downlink of BuckEye data.

The UAS provides high resolution ISR and terrain mapping capability. The BuckEye UAS allows for the collection of intelligence targets as well as the extraction of relevant cartographic features, supporting the commander through both the military intelligence community and the geospatial (topographic/terrain) engineering community. Buckeye terrain data enables the rapid generation of detailed line of sight analysis (sniper, counter sniper operations, threat analysis along routes / MSRs etc.), slope and mobility analysis, HLZ suitability analysis, precision registration of other ISR resources, and the characterization of buildings/obstructions within an urban terrain. BuckEye imagery data offers essential mission planning detail, intelligence context, as well as aiding mensuration and mobility work over complex and urban terrain. The high resolution/UNCLASSIFIED nature of the BuckEye imagery and terrain data empowers commanders, even down to the squad level, to account for obstacles that have never before been observable, and to adjust his actions on the objective accordingly.
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BuckEye Sensors/Standard Products:

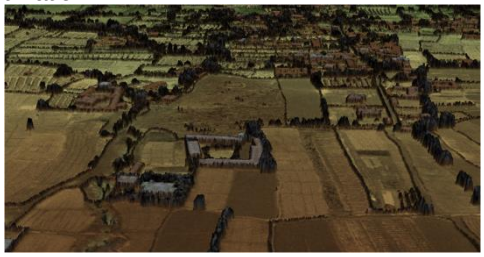
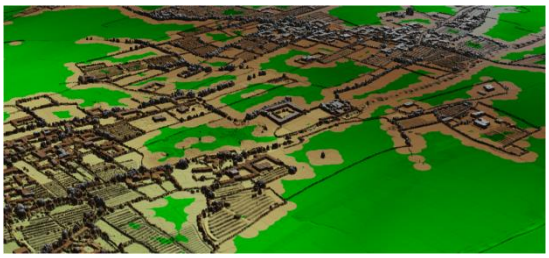
Aeroptic 2.0 80 megapixel Color Camera with 3 to 5 cm resolution orthorectified image mosaic (Mr Sid format)
OPTECH Galaxy LIDAR System with 25 to 50 cm resolution Digital Elevation Model (GEOTIFF, LAS formats)

UAS Platform:

23’ wingspan, 19’ long - 12,000’ above sea level ceiling
40 mile Line of Sight (LOS) Range for Flight Control and 8 Hour Endurance
Ground Control Station S280 shelter - 6 megabit / sec LOS Downlink (AGIG)
8 hour endurance, operating between 3,000 and 12,000’ above ground level (AGL)

Current Operations / Future Developments

Currently the UAS is at Yuma Proving Grounds preparing and upgrading for future deployments. The upgrades come after 4 years of support in Jordan and Lebanon providing US Forces with an intelligence gathering platform to conduct training and mission support for mission planning and terrain mapping. The UAS missions to Jordan and Lebanon assisted with the training and relationship building between US Forces and the Host Nation.

BuckEye UAS examples of Imagery, LIDAR, and Analysis Products (Helicopter Landing Zones)

BuckEye UAS
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